

forming a precursor of the electroconductive film by drying the applied liquid to evaporate the solvent; and

detecting the abnormality by examining the precursor of the electroconductive film.

42. (New) The method according to claim 41, wherein the examining includes a step of examining a forming position of the precursor.

43. (New) The method according to claim 41, wherein the examining includes a step of examining a formed shape of the precursor.

44. (<sup>New</sup>~~Amended~~) The method according to claim 41, wherein the examining includes a step of examining a foreign substance in the precursor.--

#### REMARKS

This application has been reviewed in light of the Office Action dated December 10, 2002. Claims 41-44 are now presented for examination, and have been added to provide Applicant with a more complete scope of protection. Claim 1 has been canceled without prejudice or disclaimer of the subject matter presented therein. Claim 41 is in independent form. Favorable consideration is requested.

The specification also has been amended to, among other things, update the priority information originally inserted in paragraph [0001] on page 1 by the substitute specification filed on October 1, 2001, to indicate that the parent application has matured into U.S. Patent 6,309,691 B1.

The drawings and disclosure were objected to for the reasons of record on page 2 of the Office Action. Without conceding the propriety of those objections, the specification has been amended and certain ones of the drawings are proposed to be amended as shown in the attached Request For Approval To Make Drawing Changes. Those changes to the specification and drawings have been made with special attention to the comments set forth on page 2 of the Office Action, and are believed to obviate both the objection to the drawings and the objection to the disclosure, set forth in the Office Action. Accordingly, withdrawal of those objections is respectfully requested.

Claim 1 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite, and also was rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 6,060,113 (Banno et al.). Paragraph 8 of the Office Action alleges that Claim 1 "conflicts with claim 1 of Application No. 09/864407", and paragraph 10 of the Office Action states that Claim 1 is provisionally rejected under 35 U.S.C. § 101 as claiming the same invention as that claimed in Claim 1 of Application No. 09/864,407. Moreover, paragraph 13 of the Office Action states that Claim 1 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable "over claims 6, 8-10, 12-14, 16-18, and 20-37 of U.S. Patent No. 6,309,691", and paragraph 12 of the Office

Action states that Claim 1 is rejected under the judicially created doctrine of obviousness-type double patenting over Claims 6, 9, and 10 of Banno et al.

Cancellation of Claim 1 renders all of these rejections moot.<sup>1</sup>

With regard to newly-added Claim 41, that claim is directed to a method for applying a liquid to a substrate by an ink jet system and detecting an abnormality of the applied liquid on the substrate. The liquid comprises a raw material of an electroconductive film and a solvent thereof, and the electroconductive film is arranged to be disposed between electrodes on the substrate and has an electron emitting portion. The method comprises the steps of applying the liquid to the substrate by the ink jet system, forming a precursor of the electroconductive film by drying the applied liquid to evaporate the solvent, and detecting the abnormality by examining the precursor of the electroconductive film.

An important aspect of the method recited in Claim 41 is the examining of the precursor to the electroconductive film, and the forming of the precursor by drying the applied liquid to evaporate the solvent. The shape and position of the completed electroconductive film correspond substantially exactly to those of the precursor, rather than to the applied liquid itself, because the shape and position of the applied liquid changes during the process of completely forming the electroconductive film from the applied liquid.

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<sup>1</sup>/ Applicant notes that Claim 1 of Application No. 09/864,407 also has been canceled without prejudice or disclaimer of subject matter in that application as well.

Banno et al., on the other hand, relates to a method of producing an electron-emitting device, including steps of forming a pair of electrodes and an electrically-conductive thin film on a substrate in such a manner that the pair of electrodes are in contact with the electrically-conductive thin film, and forming an electron emission region using the electrically-conductive thin film. A solution containing a metal element is supplied in a droplet form, such as by an inkjet system, onto the substrate thereby forming the electrically-conductive thin film. The Office Action cites col. 3, lines 16-26, col. 8, lines 10-22, and col. 12, lines 4-22 of Banno et al. in support of the Section 102(e) rejection. Those portions of Banno et al. relate to a method of producing an electron-emitting device (col. 3, lines 16-26), ejecting a droplet 7 to form an electrically-conductive thin film 4 in contact with device electrodes 2 and 3, and forming an electron-emitting region 5 (col. 8, lines 10-22), and positioning a droplet supplying position, supplying a droplet between electrodes using an ink-jet ejecting device, and determining whether a droplet has been supplied between the electrodes (col. 12, lines 4-22).

Applicant respectfully submits that, while Banno et al. may refer to observing an applied liquid droplet, and may be well-suited for its intended purpose, nothing in that reference would teach or suggest *applying a liquid comprising a raw material of an electroconductive film and a solvent thereof, to a substrate, forming a precursor of the electroconductive film by drying the applied liquid to evaporate the solvent, and detecting the abnormality by examining the precursor of the electroconductive film*, as recited in Claim 41. (Emphasis added).

Moreover, while Claims 6, 9, and 10 of Banno et al. each recite, in part, supplying one or more droplets of liquid onto a substrate, the liquid including a material constituting an electrically-conductive thin film, detecting the state of the supplied droplets, and supplying one or more droplets again on the basis of the obtained information of the state of the supplied droplets, none of those claims recites or suggests the above-emphasized features of Claim 41.

For the foregoing reasons, it is believed that Claim 41 is patentable over Banno et al.

With regard to "claims 6, 8-10, 12-14, 16-18, and 20-37 of U.S. Patent No. 6,309,691", the Examiner is respectfully requested to note that published U.S. Patent 6,309,691 B1 does not include more than 28 claims, and thus it is believed that Office Action's reference to Claims 29-37 of that patent is in error. It is presumed that the Examiner intended to refer to Claims 6, 8-10, 12-14, 16-18, and 20-37 of U.S. Patent Application No. 08/794,891 (the parent of the present application) instead. Those claims were renumbered as Claims 1-10 and 11-28, respectively, in issued U.S. Patent 6,309,691 B1, which matured from U.S. Patent Application No. 08/794,891.

In any event, Claims 1-28 of U.S. Patent 6,309,691 B1 each recite, in part, applying a liquid containing precursor material of an electroconductive film to a substrate by an ink-jet method, and detecting any defective area in an applied liquid, wherein the detecting comprises a step of examining a precursor film of an electroconductive film formed by drying the applied liquid. Claims 1-12, 24/(1-12), 25/(1-12), 26/(1-12),

27/26/(1-12), and 28/26/(1-12) further recite that a step of reapplying the liquid containing the precursor material is conducted after a step of applying a solvent of the precursor material to the precursor film detected to be defective. However, none of those Claims 1-28 recites or suggests a method for applying a liquid to a substrate by an ink jet system and detecting an abnormality of the applied liquid on the substrate, the liquid comprising a raw material of an electroconductive film and a solvent thereof, wherein the method comprises the steps of applying the liquid to the substrate by the ink jet system, forming a precursor of the electroconductive film by drying the applied liquid to evaporate the solvent, and detecting the abnormality by examining the precursor of the electroconductive film, as recited in Claim 41.

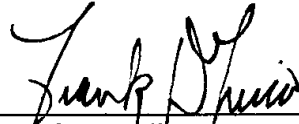
Accordingly, for all of the above reasons, it is believed that Claim 41 recites subject matter that is patentable over the references relied on in the Office Action.

Claims 42-44 each depend from Claim 41 discussed above and are therefore believed patentable over the references relied on in the Office Action for the same reasons as is Claim 41. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable reconsideration and early passage to issue of the present application.

Applicant's undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Frank J. Scinto", written over a horizontal line.

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VERSION WITH MARKINGS TO SHOW CHANGES MADE TO SPECIFICATION

At page 1, paragraph [0001] originally inserted by the substitute specification filed on October 1, 2001, has been amended as follows.

This application is a division of U.S. Application No. 08/794,891, filed February 5, 1997, now U.S. Patent 6,309,691 B1, issued October 30, 2001.

Paragraph [0068] has been amended to read as follows.

[0068] With a second technique for removing defective precursor films, after diluting the film with a solvent as with the above-described first technique (FIG. 2A), the solvent is sucked and removed from the film. The operation of sucking the solvent can be carried out by means of a spongy piece of porous resin 16 fitted to the front end of a rod [2B as shown in FIG.] 17 or alternatively by means of a syringe needle or a tube. The device shows the original profile as shown in FIG. 2C after removing the solution dissolving the precursor film so that another precursor film may be formed there. With this technique, electron-emitting devices may be arranged more densely than the case where the above-



described first technique is used. In other words, this technique is suited in cases where the puddle of the solvent cannot be sufficiently expanded, and the first technique is not feasible.

Paragraph [0100] has been amended to read as follows.

For the above bonding operation, the components were carefully aligned in order to ensure an accurate positional correspondence between the color fluorescent members [122] and the electron-emitting devices.

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